Subversion on Tiger

Version Control for the Rest of Us

Session 619

Enterprise IT

Subversion on Tiger

Version Control for the Rest of Us

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http://developer.apple.com/wwdc2005/

Introduction

Chris Parker

http://developer.apple.com/wwdc2005/

History

- CVS and Mac OS X
- Subversion and Mac OS X
- Xcode and Subversion

Subversion

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Introduction

Who am I?

- Subversion Developer, employed by CollabNet
- Member of the Apache Software Foundation
- Co-author of “Version Control with Subversion”
- I used to work for Apple
- Long-time NeXT aficionado

What You'll Learn Today

- Subversion basics
- Some Mac OS X specific goodies
- Subversion tips for you CVS users

A Few Important Subversion Tips

- Subversion uses the copy-modify-merge model…
- …but you can lock files (new in Subversion 1.2)
- Remember that revision numbers are repository-wide
- `svn help` is your friend

A Few Mac OS X Caveats

- Subversion does not recognize resource forks…
  - Use Rez & DeRez to put resource forks into Subversion
- …or extended attributes
  - Don’t put “`._`” files into Subversion (Use `svn:ignore`)
- …or Spotlight metadata

Some tools that use bundled directories can be troublesome

- Manage `.svn` directories
  - Interface Builder
  - Keynote 2
- Eat `.svn` directories
  - WebObjects Builder
  - EOModeler (has a plugin)
  - TextEdit (`*.rtfd`)

What We'll Cover

- Brief overview of Subversion
- Repository creation
- Importing a project
- Working with Subversion
- Using Subversion with a static website
- Using Subversion in an OS config directory
- XCode's Subversion integration

Don’t hesitate to ask questions during the presentation!

Subversion In Review

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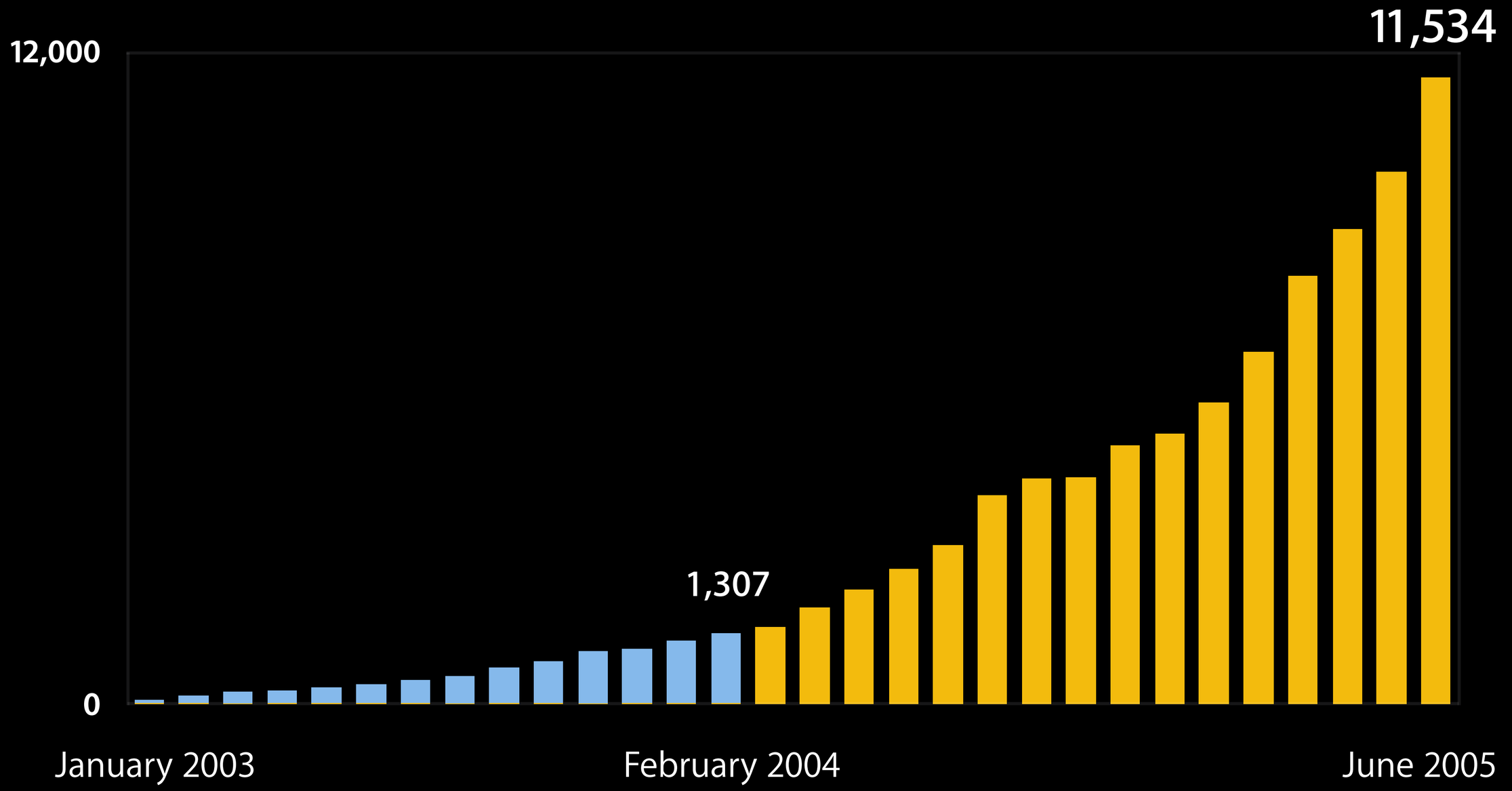
Mission Statement

The goal of the Subversion project is to build a version control system that is a compelling replacement for CVS in the open source community.

Subversion has been more successful than we ever expected

Public Subversion DAV Servers



So Now What?

- Develop new features
  - Locking (reserved checkouts)
  - Log message templates
  - Atomic renames
  - Sophisticated merge tracking
- Help developers doing tool integration
- Continue to fix bugs
- Work on PSR (Performance, Scalability, and Reliability)

Getting Started

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Getting Set Up

- Double click `619-Subversion.tar.gz`
- Move the `619-Subversion` folder to your home folder
- You should already have Subversion installed
- (If not, follow along with someone who has installed Subversion)
- Make sure the `svn*` binaries are in your `$PATH`

```
$ export PATH="$PATH:/usr/local/subversion/bin" # bash
% setenv PATH "$PATH:/usr/local/subversion/bin" # tcsh
```

Creating a Repository

- Choose a repository backend (fsfs recommended on Mac OS X)
- Choose a repository access method
- Create your repository

```
$ svnadmin create --fs-type=fsfs ~/svnrepos
```

Access Methods

Three different methods available

- svnserve access
- Local access
- HTTP access

Access your repository from the Finder!

Importing and Getting to Work

- Import your project
- Checkout a working copy
- Or update an existing working copy

Importing

- Choose your directory for import and run the command

```
$ svn import ~/619-Subversion/import-me file://$HOME/svnrepos/sample \
  -m "Initial Import"
```

Checkout a Working Copy

- We'll use Local access during this session

```
$ svn checkout file://$HOME/svnrepos ~/svnwc
$ ls svnwc/
sample
```

Subversion's Basic Work Cycle

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The Basic Work Cycle

- Update your working copy
- Make changes
- Examine your changes
- Merge others' changes
- Examine your changes *again*
- Commit your changes

Update

- Brings changes from other developers into your working copy

```
$ cd ~/svnwc
$ svn update
At revision 1.
```

Make Changes

- Edit files
- Add and delete files and directories
- Move and copy files and directories
- Remember to use `svn` when moving and copying

```
$ svn move afile.txt foo.txt
$ svn copy images photos
$ open anotherfile.txt # Make some changes
```

Tip for CVS Users:

Don’t forget that you can move and copy things, including directories!

Examine Your Changes

- Review what you've done before committing
- View what files and directories have changed

```
$ svn status
A  +   foo.txt
A  +   photos
D      afile.txt
M      anotherfile.txt
```

Tip for CVS Users:

Stop using the update command to examine your working copy!

Use `svn status`

Examine Your Changes

- View the contents that have changed

```
$ svn diff
Index: afile.txt
===================================================================
--- afile.txt   (revision 1)
+++ afile.txt   (working copy)
@@ -1 +0,0 @@
-This is a sample file.  Boo.
Index: anotherfile.txt
===================================================================
--- anotherfile.txt     (revision 1)
+++ anotherfile.txt     (working copy)
@@ -1 +1 @@
-This is a sample file.  Boo.
+This is a sample file.  Eek!
```

Merge Others' Changes

- Pull recent changes from the repository into your working copy
- Preview what `svn update` will do with `status -u`

```
$ svn update
At revision 1.
```

Commit Your Changes

- Write a log message
- Send your changes to the repository

```
$ svn commit -m "Frozzled the subspace winch."
Deleting sample/afile.txt
Sending sample/anotherfile.txt
Adding sample/foo.txt
Adding sample/photos
Transmitting file data .
Committed revision 2.
```

Tip for CVS Users:

Remember that in Subversion, commits are atomic

Other Subversion Commands

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Other Subversion Commands

- `revert`
- `resolved`
- `info`
- `propset`
- `propedit`
- `propget`
- `proplist`
- `propdel`
- …and many more!

svn revert

- Discard any changes and go back to the BASE revision of a file

```
$ cat /etc/motd > foo.txt
$ svn diff foo.txt
...
$ svn revert foo.txt
$ svn diff foo.txt
```

Tip for CVS Users:

Revert a file instead of deleting and updating it!

svn resolved

- Informs Subversion that you've resolved a conflict
- Also removes any temporary files left by the conflict

```
$ svn update
C foo.txt
$ ls -1
foo.txt
foo.txt.mine
foo.txt.r35
foo.txt.r39
$ svn resolved foo.txt
$ ls
foo.txt
```

svn info

- Find out more than you ever wanted to know about a file

```
$ svn info foo.txt
Path: foo.txt
Name: foo.txt
URL: file:///Users/fitz/svnrepos/foo.txt
Repository UUID: 60e7bb93-8ff7-0310-a3e2-acd3030dadea
Revision: 2
Node Kind: file
Schedule: normal
Last Changed Author: fitz
Last Changed Rev: 2
Last Changed Date: 2005-05-30 22:57:05 -0500 (Mon, 30 May 2005)
Text Last Updated: 2005-05-30 22:56:41 -0500 (Mon, 30 May 2005)
Properties Last Updated: 2005-05-30 22:57:10 -0500 (Mon, 30 May 2005)
Checksum: 90580754da3ed1b3e4be38c9b277bc9b
```

Manipulating and Viewing Properties

- `propset`
- `propedit`
- `propget`
- `proplist`
- `propdel`

Manipulating Properties

- `Propset`
- `Propedit`
- `Propdel`

```
$ svn propset svn:mime-type image/jpeg images/apic.jpg
property 'svn:mime-type' set on 'images/apic.jpg'
$ svn propedit svn:ignore .
Waiting for Emacs...Done
Set new value for property 'svn:ignore' on '.'
$ svn diff
...
$ svn status
...
```

Manipulating Properties

- You can also manipulate revision properties with `--revprop`

```
$ svn propset --revprop -r 1 svn:log 'New file.'
svn: Repository has not been enabled to accept revision propchanges;
ask the administrator to create a pre-revprop-change hook
```

…if your repository administrator allows you to!

Viewing Properties

- Propget
- Proplist

```
$ svn propget svn:mime-type foo.jpg
image/jpeg
$ svn proplist svn:ignore .
Build
tmp
*~
```

Still Other Commands That We'll Skip Over Here

- `cat`
- `cleanup`
- `export`
- `list`
- `lock`
- `merge`
- `mkdir`
- `status`
- `switch`
- `unlock`

Using Subversion For a Website

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Subversion and Your Website

There are several ways to publish your site if you're using Subversion

- Put a Subversion working copy on your web server and update by hand
- Use a post-commit hook to update a working copy on your web server
  - (repository and site must be on the same server)
- Have the web server poll the repository for updates
- Serve your site straight from the Subversion repository
  - Manage your `svn:mime-type`(s)
  - Requires Apache HTTP Server and DAV
  - Static site only

Subversion and Your Website

- Your sample tarball has a dumpfile in it named website.dump
- Load it into a Subversion repository to see how the mime-types are set

```
$ svnadmin load ~/svnrepos < ~/619-Subversion/svndumpfiles/website.svndump
<<< Started new transaction, based on original revision 1
* adding path : website ... done.
* adding path : website/bitmover-svn.html ... done.
...
$ cd ~/svnwc
$ svn update
...
$ svn proplist website/*
Properties on 'website/bitmover-svn.html':
svn:mime-type : text/html
...
```

Managing OS Config Files

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Is it Possible?

- Yes…
- …but be careful!

It Takes a Steady Hand…

- Add a directory to your Subversion repository
- Check out the empty directory
- Move the `.svn` directory into your config directory
- Run svn status and see what happens!
- Add files and directories that you want under version control...
- ...Use `svn:ignore` for the rest!
- Now let's do that step-by-step

Set the Scene…

- Add a directory to your Subversion repository
- Check out the empty directory

```
$ svn mkdir file://$HOME/svnrepos/etc -m "New directory"
$ svn checkout file://$HOME/svnrepos/etc ~/svnetc
```

Now Cheat…

- Move the `.svn` directory into your config directory

```
$ mv ~/svnetc/.svn ~/619-Subversion/etc/
```

Well Lookee There…

- Run svn status and see what happens!

```
$ cd ~/619-Subversion/etc/
$ svn status
```

Demo

Using Subversion in Xcode

Chris Parker

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Summary

Wilfredo Sánchez

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Documentation, Sample Code, and Other Resources

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Q&A

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